

YOUR OWN GEMSTONES

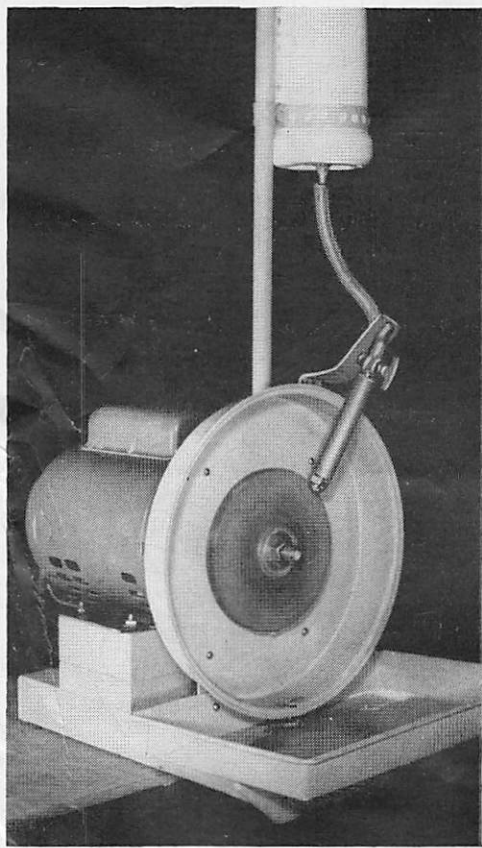
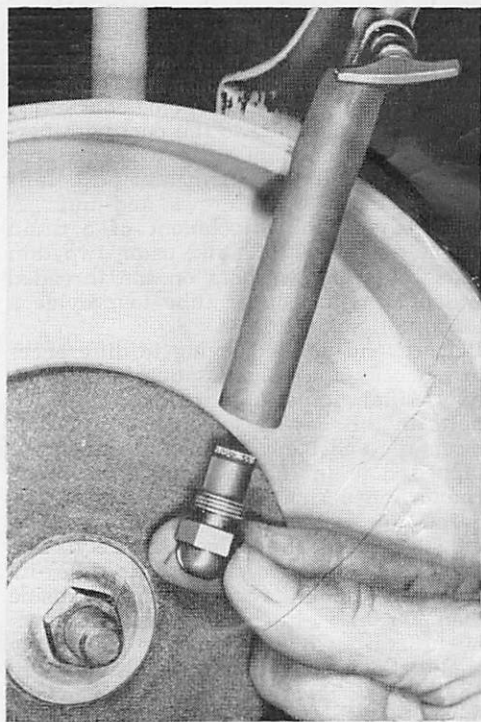
ing: (1) A silicon-carbide grinding wheel, 100 grit, size $\frac{1}{2}$ -1 in. x 6-in., with a $\frac{1}{2}$ -in. arbor hole. (2) Some silicon-carbide cloth-mounted sanding discs of 220 and 400 grit, which can be used wet or dry. (3) Some fine polishing powder such as levitated alumina, tin oxide or cerium oxide. (4) An adapter arbor to fit the motor shaft having a $\frac{1}{2}$ -in. threaded spindle. Other items needed can be purchased locally.

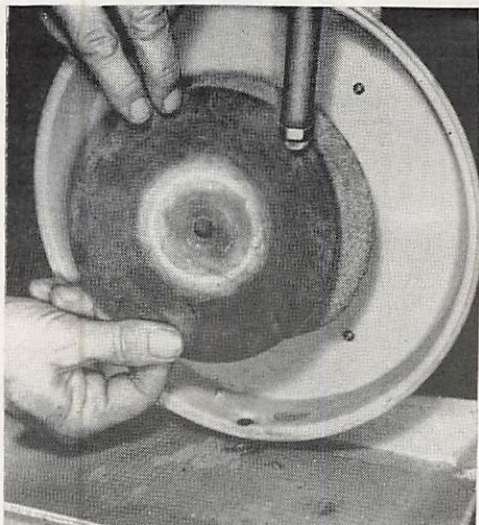
Motor mounting and brackets: Blocks to support the motor are bolted to the base to engage the slots of the motor base. A toggle switch should be located on the motor if possible, and if not, on the blocks that support it. Two flat-iron brackets support the spray shield and drain pan. The left bracket is bent to project above and in front of the spray shield to support a water-supply petcock. The front side of the brackets should extend $\frac{1}{8}$ -in. beyond the large diameter of the adapter arbor. The threaded end of the arbor is cut down so the total length will be about $\frac{3}{4}$ -in. **Spray shield and drain pan:** The spray

THE MACHINE requires little maintenance, but occasionally the nozzle may become plugged, requiring its withdrawal from the rubber tubing for cleaning. The nozzle screen should be cleaned at the same time

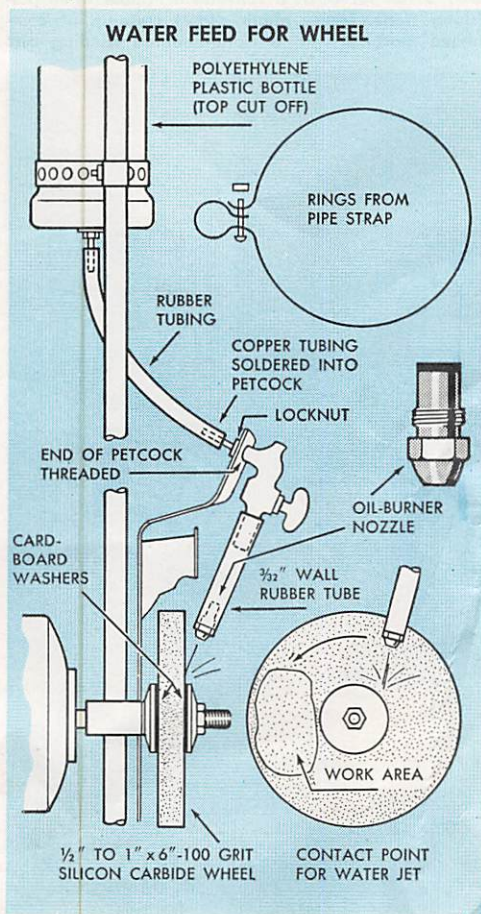


DOP STICK serves as a convenient handle when polishing stone. Lower photo shows close-up of completed machine with a cloth-mounted sanding disc





CLOTH-MOUNTED silicon carbide sanding discs in any of several grits may be used, though most work can be handled with only two different grits. A 220-grit disc is used for rough sanding; 440-grit for finishing



shield has a 1 1/4-in. hole located at its center to provide clearance around the adapter arbor. An aluminum cake tin is ideal for this purpose because it won't rust. It should be about 10 in. in diameter and not less than 1 1/2-in. deep. A 2 or 2 1/2-in. depth is even better, especially for a 1-in.-thick grinding wheel. Clamp the spray shield in place on the brackets and prick-punch for four holes to take 1/4-in. 6-32 brass machine screws. You can drill No. 34 holes through the brackets and tap the holes for the screws, or you can drill No. 28 holes and then use nuts on the screws. In either case the shield has No. 28 holes.

Drill screw holes near the bottom of the brackets for attachment of the drain pan. This is a 7 x 11-in. or slightly larger cake tin of almost any depth. For a drain nipple use a short length of 3/8-in. copper tubing flared at one end and soldered to the bottom around a punched hole. Note how one side of the drain pan is slipped behind the lower part of the spray shield. A thin slat is nailed or screwed to the front end of the base to elevate the front of the drain pan. A 1-in. hole is bored through the base to accommodate the drain nipple centrally and permit slipping a rubber drain tube on it. The drain tube goes to a pail set on the floor.

Water-supply tank: Water is held in a small tank supported on a 3/4-in. dowel about 26 in. long, which sets in a blind hole in the base. Use a polyethylene plastic bottle such as those containing household bleach. An ordinary tin can will rust, causing the water-jet orifice to clog constantly. The tank is attached to the post with perforated pipe-hanging strap which is bent carefully to fit both tank and post. It is then fastened with screws and nuts. A detail shows the attachment of a drain nipple on the water tank, using two thin brass nuts and washers on the threaded end of a 1/4-in. copper tube to provide a leakproof connection.

Petcock and nozzle: Owing to differences in petcocks and spigots, your installation may differ somewhat from that shown here. In this case a spigot was used, the discharge end being threaded to engage a tapped hole in the bracket. For a hose connection a short copper tube was soldered into the spigot. A locknut was provided to hold the spigot securely. The other end was fitted snugly into a 3 1/2-in. length of rubber tubing having an inside diameter of 3/8-in. and a wall thickness of 3/32-in., which gives the necessary rigidity. This size of tubing will fit snugly on the threaded portion of a home oil-burner nozzle, which has just the right-